

# MECHANICAL ENGINEERING DEPARTMENT

## KKWIEER, Nashik



FY SY TY and Final Year BTech Structure (2022 Pattern)

**F.Y. B. Tech Mechanical Engineering**

**(wef AY 2022-23)**

**SEM-I**

Course Code	Course Type	Title of Course	Teaching Scheme			Evaluation Scheme and Marks						Credits			
			TH	TU	PR	INSEM	ENDSEM	CCE	TUT /TW	PR /OR	TOTAL	TH	TU	PR	TOTAL
FYE221001	BSC	Applied Mathematics – I	4	1	0	20	60	20	25	0	125	4	1	0	5
FYE221004	BSC	Applied Physics (B)	3	0	2	20	60	20	50	0	150	3	0	1	4
FYE221009	ESC	Engineering Mechanics	3	0	2	20	60	20	25	0	125	3	0	1	4
FYE221012	ESC	Engineering Drawing	1	1	2	25	50	0	50	0	125	1	1	1	3
FYE221014	LHSM	Communication Skills	1	0	2	0	0	25	50	0	75	1	0	1	2
FYE221016	LHSM	Democracy, Election and Governance	2	0	0	25	25	0	0	0	50	2	0	0	2
<b>Total hours/marks/credits</b>			14	2	8	110	255	85	200	0	650	14	2	4	20

## F.Y. B. Tech Mechanical Engineering

(wef AY 2022-23)

### SEM-II

Course Code	Course Type	Title of Course	Teaching Scheme			Evaluation Scheme and Marks						Credits			
			TH	TU	PR	INSEM	ENDSEM	CCE	TUT /TW	PR /OR	TOTAL	TH	TU	PR	TOTAL
FYE221002	BSC	Applied Mathematics – II	4	1	0	20	60	20	25	0	125	4	1	0	5
FYE221005	BSC	Applied Chemistry	3	0	2	20	60	20	50	0	150	3	0	1	4
FYE221006	ESC	Fundamentals of Electrical Engineering	3	0	2	20	60	20	50	0	150	3	0	1	4
FYE221010	ESC	Programming in C	2	0	2	25	50	0	50	0	125	2	0	1	3
FYE221008	ESC	Fundamentals of Mechanical Engineering	3	0	2	20	60	20	50	0	150	3	0	1	4
FYE221013	ESC	Workshop Practice	0	0	2	0	0	0	50	0	50	0	0	1	1
FYE221015	PSI	Engineering Explorations	0	0	2	0	0	0	50	0	50	0	0	1	1
<b>Total hours/marks/credits</b>			15	1	12	105	290	80	325	0	800	15	1	6	22

## Structure of Semester – III (SY - B.Tech.):

Course Code	Course Type	Title of Course	Teaching Scheme Hrs./week			Evaluation Scheme and Marks							Credits			
			TH	TU	PR	In Sem	End Sem	CCE	TU/TW	PR	OR	Total	TH	TU	PR / OR	Total
SMH232501	BSC/ DCC	Applied Mathematics –III	3	1	-	20	60	20	25	-	-	125	3	1	-	4
MEC232002	DCC	Fluid Mechanics	3	-	-	20	60	20		-	-	100	3	-	-	3
MEC232003	DCC	Engineering Metallurgy	3	-	-	20	60	20		-	-	100	3	-	-	3
MEC232004	ESC	Basic Electronics for Mechanical Engineering	3	-	-	20	60	20		-	-	100	3	-	-	3
MEC232005	DCC	Manufacturing Processes	3	-	-	20	60	20		-	-	100	3	-	-	3
MEC232006	LHSM	Engineering Economics	1	-	-	-	-	-	25	-	-	25	1	-	-	1
MEC232007	DCC	Fluid Mechanics Lab	-	-	2	-	-	-	25			25	-	-	1	1
MEC232008	DCC	Engineering Metallurgy Lab	-	-	2	-	-	-	25		25	50	-	-	1	1
MEC232009	ESC	Basic Electronics for Mechanical Engineering Lab	-	-	2	-	-	-	25		25	50	-	-	1	1
MEC2320010	PSI	Geometric Modeling and Production Drawing	-	-	4	-	-	-	25	50	-	75	-	-	2	2
<b>Total</b>			<b>16</b>	<b>1</b>	<b>10</b>	<b>100</b>	<b>300</b>	<b>100</b>	<b>150</b>	<b>50</b>	<b>50</b>	<b>750</b>	<b>16</b>	<b>1</b>	<b>5</b>	<b>22</b>

## Structure of Semester – IV (SY - B.Tech.):

Course Code	Course Type	Title of Course	Teaching Scheme Hrs./week			Assessment Scheme of Marks							Credits			
			TH	TU	PR	In Sem	End Sem	CCE	TU/ TW	PR	OR	Total	TH	TU	PR/OR	Total
MEC232011	DCC	Engineering Thermodynamics	3	-	-	20	60	20	-	-	-	100	3	-	-	3
MEC232012	DCC	Theory of Machines	3	-	-	20	60	20	-	-	-	100	3	-	-	3
MEC232013	DCC	Mechanics of Material	3	-	-	20	60	20	-	-	-	100	3	-	-	3
MEC232014	DCC	Electric and Hybrid Vehicles	3	-	-	20	60	20	-	-	-	100	3	-	-	3
MEC232015	LHSM	Economics for Sustainability	3	-	-	20	60	20	-	-	-	100	3	-	-	3
MEC232016	NC/AC / ASM	Design Thinking	1	-	-	-	-	-	-	-	-	-	-	-	-	-
MEC232017	DCC	Thermal Engineering lab	-	-	2	-	-	-	25	25	-	50	-	-	1	1
MEC232018	DCC	Theory of Machines Lab	-	-	2	-	-	-	25	-	25	50	-	-	1	1
MEC232019	DCC	Mechanics of Material Lab	-	-	2	-	-	-	25	-	25	50	-	-	1	1
MEC232020	PSI	PBL :Idea Lab Workshop	-	-	4	-	-	-	50	-	-	50	-	-	2	2
<b>Total</b>			<b>16</b>	<b>-</b>	<b>10</b>	<b>100</b>	<b>300</b>	<b>100</b>	<b>125</b>	<b>25</b>	<b>50</b>	<b>700</b>	<b>15</b>	<b>-</b>	<b>5</b>	<b>20</b>

T.Y. B. Tech wef AY 2024-25



SEM-V

CourseCode	Course Type	Title of Course	TeachingScheme			Evaluation Scheme and Marks								Credits			
			TH	TU	PR	INSEM	ENDSEM	CCE	TUT	TW	PR	OR	TOTAL	TH	TU	PR	TOTAL
MEC223001	DCC	Machine Design-I	3	-	-	20	60	20	-	-	-	-	100	3	-	-	3
MEC223002	DCC	Heat Transfer	3	-	-	20	60	20	-	-	-	-	100	3	-	-	3
MEC223003	DCC	Numerical and Statistical Methods	3	-	-	20	60	20	-	-	-	-	100	3	-	-	3
MEC223004	DCC	Heat Transfer Lab	-	-	2	-	-	-	-	25	-	25	50	-	-	1	1
MEC223005	DCC	Numerical and Statistical Methods Lab	-	-	2	-	-	-	-	25	25	-	50	-	-	1	1
MEC223006	DEC	Elective-I	3	-	-	20	60	20	-	-	-	-	100	3	-	-	3
MEC223007	DEC	Elective-I Lab	-	-	2	-	-	-	-	25	-	25	50	-	-	1	1
MEC223008	OEC	Environmental Economics	2	-	-	-	-	50	-	-	-	-	50	2	-	-	2
MEC223009	ESC	Mechatronics	3	-	-	20	60	20	-	-	-	-	100	3	-	-	3
MEC223010	PSI	PBL	-	1	2	-	-	-	25	25	-	-	50	-	1	1	2
<b>Total</b>			<b>17</b>	<b>01</b>	<b>08</b>	<b>100</b>	<b>300</b>	<b>150</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>50</b>	<b>750</b>	<b>17</b>	<b>1</b>	<b>4</b>	<b>22</b>
Elective-I			<b>MEC223006A</b> Machining Technology				<b>MEC223006B</b> Energy Audit and Management						<b>MEC223006C</b> Design of Pressure Vessel and Piping				
Elective-I Lab			<b>MEC223007A</b> Machining Technology Lab				<b>MEC223007B</b> Energy Audit and Management Lab						<b>MEC223007C</b> Design of Pressure Vessel and Piping Lab				

T.Y. B. Tech wef AY 2024-25



SEM-VI

CourseCode	Course Type	Title of Course	TeachingScheme			Evaluation Scheme and Marks						Credits			
			TH	TU	PR	INSEM	ENDSEM	CCE	TW	PR /OR	TOTAL	TH	TU	PR	TOTAL
MEC223011	DCC	Machine Design-II	3	-	-	20	60	20	-	-	100	3	-	-	3
MEC223012	DCC	Energy Engineering	3	-	-	20	60	20	-	-	100	3	-	-	3
MEC223013	DCC	Machine Design Lab (I&II)	-	-	2	-	-	-	25	25	50	-	-	1	1
MEC223014	DEC	Elective-II	3	-	-	20	60	20			100	3	-	-	3
MEC223015	DEC	Elective-III	3	-	-	20	60	20	-	-	100	3	-	-	3
MEC223016	DEC	Elective-II Lab	-	-	2	-	-	-	25	25	50	-	-	1	1
MEC223017	ESC	Machine Intelligence	3	-	-	20	60	20			100	3	-	-	3
MEC223018	OEC	Financial management	2	-	-	-	-	50	-	-	50	2	-	-	2
MEC223019	ASM	Measurement and Automation Lab	-	1	2	-	-		25	25	50	-	1	1	2
MEC223020	PSI	Seminar	-	-	2	-	-	-	50	-	50	-	-	1	1
<b>Total</b>			<b>17</b>	<b>01</b>	<b>08</b>	<b>100</b>	<b>300</b>	<b>150</b>	<b>125</b>	<b>75</b>	<b>750</b>	<b>17</b>	<b>1</b>	<b>4</b>	<b>22</b>
Elective-II			<b>MEC223014A</b> Finite Element Analysis				<b>MEC223014B</b> Renewable Energy Engineering				<b>MEC223014C</b> Computational Fluid Dynamics		<b>MEC223014D</b> Operation Research		
Elective-III			<b>MEC223015A</b> Computer Integrated Manufacturing				<b>MEC223015B</b> Automobile Engineering				<b>MEC223015C</b> Product Design, Innovation and Entrepreneurship				
Elective-II Lab			<b>MEC223016A</b> Finite Element Analysis Lab				<b>MEC223016B</b> Renewable Energy Engineering Lab				<b>MEC223016C</b> Computational Fluid Dynamics Lab		<b>MEC223016D</b> Operation-Research Lab		

Final year B. Tech wef AY 2025-26



SEM-VII

Course Code	Course Type	Title of Course	Teaching Scheme			Evaluation Scheme and Marks						Credits				
			TH	TU	PR	INSEM	ENDSEM	CCE	TUT /TW	PR /OR	TOTAL	TH	TU	PR	TOTAL	
MEC224001	DCC*	Engineering System Design and optimization	3	-	-	-	100	-				100	3	-	-	3
MEC224002	DEC*	Elective-VI	3	-	-	-	100	-	-	-		100	3	-	-	3
MEC224003	LHSM*	Principles of Macro Economics	2	-	-	-	-	50	-	-		50	2	-	-	2
MEC224004	INTERNSHIP	Internship	-	-	24	-	-	-	300	200		500	-	-	12	12
<b>Total</b>			<b>8</b>	<b>00</b>	<b>24</b>	<b>-</b>	<b>200</b>	<b>50</b>	<b>300</b>	<b>200</b>		<b>750</b>	<b>8</b>	<b>-</b>	<b>12</b>	<b>20</b>
Elective-VI			MEC224002A Total Quality Management				MEC224002B Smart Materials				MEC224002C Design of Heat Exchangers					

\* Considering Internship of 6 months, these courses to be offered in online mode.



**Final year B. Tech wef AY 2025-26**



**SEM-VIII**

CourseCode	CourseType	Title of Course	TeachingScheme			Evaluation Scheme and Marks						Credits			
			TH	TU	PR	INSEM	ENDSEM	CCE	TUT /TW	PR /OR	TOTAL	TH	TU	PR	TOTAL
MEC224011	DCC	HAVC	3	-	-	20	60	20			<b>100</b>	3	-	-	<b>3</b>
MEC224012	DCC	Dynamic of Machinery	3	-	-	20	60	20			<b>100</b>	3	-	-	<b>3</b>
MEC224013	DCC	Dynamic of Machinery Lab	-	-	2	-	-	-	25	25	<b>50</b>	-	-	1	<b>1</b>
MEC224014	DCC	Data Analytics Lab	-	-	2	-	-	-	25	25	<b>50</b>	-	-	1	<b>1</b>
MEC224015	DEC	Elective-IV	3	-	-	20	60	20	-	-	<b>100</b>	3	-	-	<b>3</b>
MEC224016	DEC	Elective-V	2	-	-	20	30	-	-	-	<b>50</b>	2	-	-	<b>2</b>
MEC224017	ASM	Robot Kinematics and Dynamics	3	-	-	20	60	20	-	-	<b>100</b>	3	-	-	<b>3</b>
MEC224018	HSSM –EEM LHSM	Industrial Engineering	2	-	-	-	-	50	-	-	<b>50</b>	2	-	-	<b>2</b>
MEC224019	PSI	Project Work	-	-	8	-	-	-	100	50	<b>150</b>	-	-	4	<b>4</b>
<b>Total</b>			<b>16</b>	<b>00</b>	<b>12</b>	<b>100</b>	<b>270</b>	<b>130</b>	<b>150</b>	<b>100</b>	<b>750</b>	<b>16</b>	<b>-</b>	<b>6</b>	<b>22</b>
Elective-IV			MEC224015A Heat Transfer in Electronic System				MEC224015B Smart Manufacturing with Industry 4.0				MEC224015C Design of Electro-Mechanical System		MEC224015D Supply chain management		
Elective-V			MEC224016A Lubrication, Friction and Wear				MEC224016B Unmanned Aerial Vehicles				MEC224016C Sustainable Futures and Materials				